

AMENDMENTS TO THE CLAIMS

The following listing of the claims is provided in accordance with 37 C.F.R. 1.121:

1. (currently amended) A system for detecting a rub in a turbomachine comprising:

a turbomachine comprising a rotor, a stator, and a plurality of blades extending radially from the rotor, or the stator, or a combination thereof;

sensors monitoring turbomachine conditions; and

an on site monitor in communication with the sensors, and loaded with instructions to implement a method for detecting whether a rub is occurring in the turbomachine between tip portions of the plurality of blades and corresponding seal portions of the turbomachine.

2. (original) The system of claim 1 further comprising a server in communication with the on site monitor via an internet.

3. (currently amended) A computer implemented method for detecting a rub in a turbomachine, the method comprising:

monitoring turbomachine conditions, wherein the turbomachine comprises a rotor, a stator, and a plurality of blades extending radially from the rotor, or the stator, or a combination thereof; [[and]]

determining whether a rub is occurring between tip portions of the plurality of blades and corresponding seal portions of the turbomachine [[.]]; and
outputting an indication of the rub to a computer display.

4. (currently amended) A storage medium encoded with a machine-readable computer program code for detecting whether a rub is occurring in a turbomachine, the storage medium including instructions for causing a computer to implement a method comprising:

obtaining data indicating turbomachine conditions, wherein the turbomachine comprises a rotor, a stator, and a plurality of blades extending radially from the rotor, or the stator, or a combination thereof; [[and]]

determining whether a rub is occurring between tip portions of the plurality of blades and corresponding seal portions of the turbomachine; and
outputting an indication of the rub to a computer display.

5.-50 (cancelled).

51. (currently amended) A system, comprising:
a turbomachine comprising a rotor, a stator, and a plurality of blades extending radially from the rotor, or the stator, or a combination thereof;
means for monitoring turbomachine conditions; and
means for detecting whether a rub is occurring in the turbomachine between tip portions of the plurality of blades and corresponding seal portions of the turbomachine.

52. (currently amended) A system, comprising:
a plurality of turbomachine sensors configured to couple to a turbomachine comprising a rotor, a stator, and a plurality of blades extending radially from the rotor, or the stator, or a combination thereof, wherein the plurality of turbomachine sensors is configured to sense operational parameters of the turbomachine; and

a rub detection system configured to monitor the plurality of turbomachine sensors and to detect a turbomachine rub event occurring between tip portions of the plurality of blades and corresponding seal portions of the turbomachine.

53. (cancelled)

54. (currently amended) A system, comprising:

a rub detection system configured to monitor operational parameters of a turbomachine comprising a rotor, a stator, and a plurality of blades extending radially from the rotor, or the stator, or a combination thereof, wherein the rub detection system is configured and to detect a turbomachine rub event occurring between tip portions of the plurality of blades and corresponding seal portions of the turbomachine.

55. (previously presented) The system of claim 54, comprising a turbomachine, wherein the rub detection system is coupled to the turbomachine.

56. (currently amended) A computer implemented method, comprising:
analyzing turbomachine operational data to detect a rub event in the turbomachine comprising a rotor, a stator, and a plurality of blades extending radially from the rotor, or the stator, or a combination thereof[.]], wherein the rub event occurs between tip portions of the plurality of blades and corresponding seal portions of the turbomachine;
and

outputting an indication of the rub event to a computer display.

57. (previously presented) The method of claim 56, comprising monitoring a turbomachine to obtain the operational data.

58. (previously presented) The method of claim 57, wherein monitoring comprises monitoring the turbomachine on-site.

59. (cancelled)

60. (previously presented) The method of claim 57, wherein monitoring comprises monitoring the operational data in real time.

61. (previously presented) The method of claim 56, wherein analyzing comprises detecting the rub event in real time with operation of a turbomachine.

62. (new) The system of claim 1, wherein the plurality of blades is disposed on the rotor and the corresponding seal portions are disposed on the stator.

63. (new) The system of claim 1, wherein the turbomachine conditions comprise bearing vibration, or temperature, or pressure, or eccentricity, or axial displacement, or load, or condenser pressure values, or any combination thereof.

64. (new) The system of claim 3, wherein the blades are disposed on the rotor, or the stator, or any combination thereof and the seals are disposed on the rotor, or the stator, or any combination thereof.

65. (new) The system of claim 3, wherein the turbomachine conditions comprise bearing vibration, or temperature, or pressure, or any combination thereof.

66. (new) The system of claim 4, wherein the plurality of blades is disposed on the rotor and the corresponding seal portions are disposed on the stator.

67. (new) The system of claim 4, wherein the turbomachine conditions comprise bearing vibration, or temperature, or axial displacement, or load, or condenser pressure values, or any combination thereof.

68. (new) The system of claim 51, wherein the plurality of blades is disposed on the rotor and the corresponding seal portions are disposed on the stator.

69. (new) The system of claim 51, wherein the turbomachine conditions comprise temperature, or eccentricity, or load, or condenser pressure values, or any combination thereof.

70. (new) The system of claim 52, wherein the plurality of blades is disposed on the rotor and the corresponding seal portions are disposed on the stator.

71. (new) The system of claim 52, wherein the operational parameters comprise temperature, or load, or condenser pressure values, or any combination thereof.

72. (new) The system of claim 54, wherein the plurality of blades is disposed on the rotor and the corresponding seal portions are disposed on the stator

73. (new) The system of claim 54, wherein the operational parameters comprise eccentricity, or axial displacement, or load, or condenser pressure values, or any combination thereof.

74. (new) The method of claim 56, wherein the plurality of blades is disposed on the rotor and the corresponding seal portions are disposed on the stator.

75. (new) The method of claim 56, wherein the operational data comprises data relating to temperature, or pressure, or eccentricity, or any combination thereof of the turbomachine.